What is claimed is:

1. A method for differentiating mammalian bone marrow cells or cord blood-derived cells into myocardial precursor cells and/or myocardial cells by culturing said bone marrow cells or cord blood-derived cells with cells isolated from mammalian fat tissues or a culture supernatant thereof.

2. The method according to claim 1, wherein culture is conducted for at least 1 day using a culture solution containing bovine serum, human serum, or any substitute thereof.

3. The method according to claim 1 or 2, wherein culture is conducted with the addition of at least one cytokine to a culture solution.

4. The method according to claim 3, wherein the cytokine is selected from among: members of the EGF family, such as EGF, TGF-α, HB-EGF, FGF, and HGF; members of the TGF-β family, such as TGF-β; members of the IL family, such as LIF; members of the VEGF family, such as VEGF-A; members of the PDGF family, such as PDGF-AB and PDGF-BB; members of the Ephrin family, such as Ephrin B; and SCF.

5. The method according to any one of claims 1 to 4, wherein the bone marrow cells are mesenchymal stem cells or hematopoietic stem cells.

6. The method according to any one of claims 1 to 5, wherein the cord blood-derived cells are mononuclear cells.

7. The method according to any one of claims 1 to 6, wherein the bone marrow cells or cord blood-derived cells are mixed with the cells isolated from fat tissues at a ratio of 0.1:1 to 1:10.

8. The method according to any one of claims 1 to 7, wherein the myocardial

precursor cells and/or myocardial cells are sarcomeric actin-positive cells.

9. Myocardial precursor cells and/or myocardial cells prepared by the method according to any one of claims 1 to 8.

10. The myocardial precursor cells and/or myocardial cells according to claim 9, which can be transplanted into mammalian adults.

11. A method for evaluating the effects of a test substance on myocardial precursor cells and/or myocardial cells by adding the test substance to the myocardial precursor cells and/or myocardial cells according to claim 9 or 10.